

REMARKS

Upon entry of the present amendment, claims 1, 3, 5, 6, 8, 10, 11, 13, 15, 16, 18, 21, 23, 25, 26, and 27 will have been amended to correct informalities in the claim language and to more clearly define the invention. Applicants respectfully submit that all pending claims are now in condition for allowance.

Applicants wish to thank Examiner Channavajjala for his outstanding courtesy and cooperation exhibited during the personal interview conducted on January 14, 2004.

During the above-noted interview, Applicants representative discussed the features of the present invention and the advantages thereof with respect to the prior art. Moreover, Applicants representative discussed the references cited by the Examiner and pointed out the shortcomings thereof with respect to the features of the present invention.

In particular, it was noted that the VAN MAREN et al. reference does not disclose, inter alia, using start address information for an unrecorded area as recited in claims 1, 6, 11, 16, and 21. Regarding claims 3, 13, 18, and 23, it was noted that the LEONHARDT et al. reference does not disclose, inter alia, the use of invalid extent management information. Finally, regarding claims 5, 10, 15, 20, and 25-27, in particular it was pointed out that the CAFFARELLI reference does not disclose, inter alia, the use of address information that corresponds to recorded chaining and reserve chaining information and update recorded chaining and reserve chaining information.

In the above-referenced Official Action, the Examiner rejected claims 1, 2, 6, 7, 11, 12, 21 and 22 under 35 U.S.C. § 102(a) or § 102(b) as being anticipated by VAN MAREN et al. (U.S. Patent No. 5,579,516). The Examiner rejected claims 3, 4, 8, 9, 13, 14, 18, 19, 23 and 24 under 35 U.S.C. § 102(a) or § 102(b) as being anticipated by LEONHARDT et al. (U.S. Patent No. 5485,321). The Examiner rejected claims 5, 10, 15, 20 and 25-27 under 35 U.S.C. § 102(a) or § 102(b) as being anticipated by CAFFARELLI (EP 0730274 A2). Applicants respectfully traverse these rejections, at least for the reasons stated below.

With respect to claims 1, 2, 6, 7, 11, 12, 21 and 22, the Examiner has relied on VAN MAREN et al. to teach recording start address information for an unrecorded area existing in a volume space as part of root directory file management information.

On the contrary, VAN MAREN et al. discloses how to sequentially record file management information. VAN MAREN et al. does not disclose where to record information in an unrecorded area. More specifically, VAN MAREN et al. disclose a root directory D0 and subdirectories D1 and D2. Each directory includes information control blocks (ICBs) pointing to the directory itself, as well as to associated subdirectories (See col. 4, lines 31-62). However, unlike the present invention as recited in claims 1, 2, 6, 7, 11, 12, 21 and 22, VAN MAREN et al. does not disclose including a start address of an unrecorded area in the root directory.

The present invention reads the root directory file management information from the volume structure. This allows detection of the address information of a unrecorded area from the root directory file management information. Advantages of including the start address of an unrecorded area include, for example, the ability to search location information of the unrecorded area using only the volume/file structure, as well as the ability to overwrite on the same volume even for a recording medium having restrictions on the number of rewrites.

Applicants have further clarified the claimed invention to include address information for a root directory in claims 1, 6, 11, 16, and 21. This clarifies the relationship between the root directory and the start address information. This combination further distinguishes the present claims from VAN MAREN et al.

Accordingly, since VAN MAREN et al. do not disclose each and every element of Applicants' claimed invention, withdrawal of the rejections under 35 U.S.C., § 102(a) and § 102(b) based on VAN MAREN et al. is respectfully requested.

With respect to claims 3, 4, 8, 9, 13, 14, 18, 19, 23 and 24, the Examiner has relied on col. 12, lines 45-64, of LEONHARDT et al. to teach recording invalid data before and after volume/file structure and a data file. However, LEONHARDT et al. discloses the use of beginning and end of valid data blocks. In particular, column 12, lines 45-64, discloses VBOT and VEOT markers to designate the beginning and end of a valid area. However,

LEONHARDT et al. does not disclose any handling of the invalid data. LEONHARDT et al. merely discloses that the invalid data blocks may be recoverable or partially recoverable.

The present invention uses invalid data areas for recording after all the capacity has been sequentially used for recording. The present invention reads the root directory file management information from the volume structure to detect the address information of invalid extents. The invalid extents information are part of the root directory and this allows the present invention to manage the invalid data areas.

Applicants have further clarified the claimed invention to include address information for a root directory in claims 3, 8, 13, 18, and 23. This clarifies the relationship between the root directory and the invalid extent management information. This amendment finds support in the specification at, inter alia, page 34, lines 4-16. Furthermore, this combination further distinguishes the present claims from LEONHARDT et al.

The Examiner also relied on col. 20, lines 50-56, which only disclose recording scratch data (temporarily saved and subsequently recorded over) on an endless loop of tape. LEONHARDT et al. does not appear to provide any disclosure of recording or otherwise handling invalid data blocks. Furthermore, according to the claimed invention, the invalid extent management information is recorded as part of management information of the root directory. Therefore, location information of the invalid data can be searched using only the volume/file structure.

Accordingly, since LEONHARDT et al. do not disclose each and every element of Applicants' claimed invention, withdrawal of the rejections under 35 U.S.C., § 102(a) and § 102(b) based on LEONHARDT et al. is respectfully requested.

With respect to claims 5, 10, 15, 20 and 25-27, the Examiner has relied on col. 15, lines 23-46 of CAFFARELLI to teach recording root directory file management information as main chaining information and reserve chaining information. However, the cited portions of CAFFARELLI do not disclose the recited multiple sets of chaining information. To the contrary, col. 15, lines 23-46, are directed to a directory structure field 380 that contains a subset of basic information that enables the file system to rapidly determine the relationship between directories and files, and to rapidly access these directories and files without having to chain through file/directory records.

The reserve chaining information in the present invention holds the location information of the area to store the main chaining information and the reserve chaining information. Thus, the chaining information areas are highly linked. To clarify this recitation, claims 5, 10, 15, and 25-27 have been amended to further recite address information for a file set descriptor. The recitation finds support in the specification on page 44, lines 17-19.

Moreover, the Examiner apparently identified element 505 of Fig. 10 as corresponding to the reserve chaining information area recited in the pending claims. However, whereas

the reserve chaining information of the present invention is essentially a duplicate of the main chaining information (see, e.g., page 19, lines 20-24) and enables searching an unrecorded area or new root directory, element 505 of Fig. 10 is merely an attribute flag, indicated as “reserved.” In other words, element 505 represents an attribute that is available “if desired for the later addition of other attributes.” See col. 14, lines 7-8.

Accordingly, since CAFFARELLI does not disclose each and every element of Applicants’ claimed invention, withdrawal of the rejections under 35 U.S.C., § 102(a) and § 102(b) based on CAFFARELLI is respectfully requested.

In view of the herein contained amendments and remarks, Applicants respectfully request reconsideration and withdrawal of previously asserted rejections set forth in the Official Action, together with an indication of the allowability of all pending claims, in due course. Such action is respectfully requested and is believed to be appropriate and proper.

Pursuant to MPEP §714.13, Applicants contend that entry of the present amendment is appropriate because the proposed amended claims avoid the rejections set forth in the last Office Action, resulting in the application being placed in condition for allowance, or, alternatively, the revised claims place the application in better condition for purposes of appeal. More specifically, the additions of address information for a root directory and address information for a file set descriptor merely clarify the relationships of the data in the data storage medium. Furthermore, the revised claims do not present any new issues that

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would require any further consideration and/or search by the Examiner, and the amendment does not present any additional claims without canceling a like number of pending claims. Accordingly, entry of the present amendment is respectfully requested.

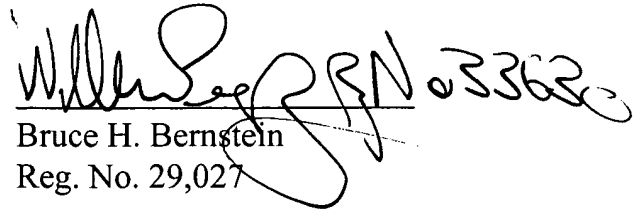
Entry of the present amendment is believed to be proper, even though the present application is subject to a final rejection in view of the fact that none of the art of record, whether considered alone or in any proper combination, discloses or suggests the present invention as defined by the pending claims. Furthermore, in view of the above remarks, reconsideration of the Examiner's action and allowance of the present application are respectfully requested and are believed to be appropriate. Thus, Applicant respectfully requests reconsideration and entry of the present amendment.

Applicants have also attached sheets of drawings that are all the same size as required by the Draftsman in the PTO Form 948 dated October 22, 2003 and mailed in the action of October 29, 2003. Applicants respectfully assert that the drawings are now proper.

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Should the Examiner have any questions concerning this Reply or the present application, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,
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